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SOURCE Documentary as indicated. (Information specifically requested.)

RECENTLY PUBLISHED RESEARCH OF THE IVANOVO STATE MEDICAL INSTITUTE, USSR

"Sulfonation Reaction. Conversion of 1-napthalene-sulfonic Acid into the 2-isomer," A. A. Spryskov, N. A. Ovsyankina, Ivanovo State Med Inst

"Zhurnal Obshchey Khimii" Vol 16, 1946, pp 1057-9

Time factor of conversion of 1-$C_{10}H_7SO_3H$ (I) into the 2-isomer (II) was studied at 160-2°; the equilibrium between I and II is established under these conditions in 1-1.5 hours at the ratio of 15:85 of the 2 isomers. Heating done in the presence of $H_2SO_4 \cdot H_2O$ and of other concentrations of H_2SO_4, down to 36% H_2SO_4. It was shown that 57% H_2SO_4 leads to establishment of equilibrium more rapidly than does the 36% acid. This arises from hydrolysis of the $C_{10}H_7SO_3H$ by the stronger acid, with formation of $C_{10}H_8$ in the 15:85 isomer ratio.

"Sulfonation Reaction. Method of Sulfonation of Naphthalene," A. A. Spryskov, Ivanovo State Med Inst

"Zhurnal Obshchey Khimii" Vol 16, 1946, pp 1060-4

New method for the sulfonation of $C_{10}H_8$ which consists of the addition of 1 mole 100% H_2SO_4 to 1.7 moles $C_{10}H_8$ at 85°, and the heating of the mixture 2 hours to 163° was developed. Final mixture contains 5% unreacted H_2SO_4 and 2-2.5% sulfones and tars. Excess $C_{10}H_8$ is recovered by dilution of the mass with water above 80°. Sulfonated product contains 86.2% II.

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"Sulfonation Reaction. Equilibrium Between 1- and 2-napthalenesulfonic Acids," A. A. Spryskov, Ivanovo State Med Inst

"Zhurnal Obshchey Khimii" Vol 17, 1947, pp 1309-15

Sulfonation of $C_{10}H_8$ by an equimolecular amount of 100% H_2SO_4 in sealed tubes at 122° leads to equilibrium between the 1- and 2-sulfo isomers only very slowly, and only after some 500 hours does a real approach to equilibrium take place. Equilibrium ratio at 122° is 1-:2-isomer = 4:96. At 140° the equilibrium is reached fairly rapidly (about 32 hours) when the above ratio is 9:91; with 1.16 moles of $C_{10}H_8$, the amount of 1-sulfo isomer drops to 6.5%, but with less than 1 mole $C_{10}H_8$, the 1-isomer increases to 19% (the phenomenon is as yet unexplained). At 163°, 4 hours suffice for equilibrium; here, if the residual H_2SO_4 concentration drops to 43%, the 1-sulfo isomer at equilibrium is only 6.5% of the total. When the H_2SO_4 concentration drops only to 57%, this isomer is found in 18.5% concentration.

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